

107



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/299,388	04/27/1999	RICHARD FOTLAND	99.01	3198

7590 03/23/2004

HAYES SOLOWAY HENNESSEY GROSSMAN & HAGE
175 CANAL STREET
MANCHESTER, NH 031012335

EXAMINER

CHOI, FRANK I

ART UNIT	PAPER NUMBER
----------	--------------

1616

DATE MAILED: 03/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	09/299,388		FOTLAND ET AL.	
	Examiner		Art Unit	
	Frank I Choi		1616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-9,14-23,25-30,32-37,48,49,51-57,59,60,62-67 and 69-71 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-9,14-23,25-30,32-37,48,49,51-57,59,60,62-67 and 69-71 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

In addition to the informalities identified on a previous PTO-948, the drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: Reference number 49 in Figures 6 and 7, Reference number 53 in Figure number 7. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 and 48 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation “essentially zero velocity in the direction of said dielectric substrate.” Claim 48 recites the limitation “at respective fixed distances relative to the surface of said dielectric substrate” which renders the claims indefinite. These propositions can only be true if the length and width of region two is not greater than the surface of the dielectric substrate and the surface of the dielectric substrate does not form a side wall defining region two and volume of region two is not greater than the conduit delivering the aerosol into region two, however, the claims do not set forth any such limitation. Assuming zero velocity toward the

Art Unit: 1616

dielectric substrate, if the dielectric substrate is smaller in length and/or width to region two a given particle will travel parallel to the surface of the substrate and as moves across region two it will get closer the surface of the dielectric substrate until it reaches the beginning of the surface, at which point a given particle will be essentially at a fixed distance relative to the surface of the dielectric substrate. Another way to look at this is to picture a point at the beginning of surface of the dielectric substrate, draw a radius perpendicular to the surface of said substrate, draw a circle having said radius with the center point of said circle at the point in the beginning of said substrate. If one draws a parallel tangential line, it is clear that a point on the line which intersects the radius will be closer than a point on the line which is to the left, i.e. off the surface of the dielectric substrate, of the radius to the surface of said substrate. Further, in Figures 4-7, the dielectric substrate includes the side walls which define region two. As such, when the aerosol moves in to region two the particles contained therein will be moving toward one of the side walls and away from the other side wall. As such, the velocity will not be zero and the distance will not be fixed relative to the surface of the dielectric substrate. Furthermore, as a matter of physics, any gas, and, thus, the aerosol, will expand according to the volume of a given space (See The Columbia Encyclopedia, Fifth Ed. (1994), "gas" (<http://www.slider.com/enc/21000/gas.htm>); Remington's (17th Ed. 1985), pg. 281). As such, in Figures 5-7, when the aerosol leaves conduit (23), it will expand to fill the volume defined by (33) and (37) or (49). As such, with or without the force provided by the alternating current there will be velocity towards the surface of the dielectric substrate.

Claims 1, 3-9,14-23,25-30,32-37, 48, 49,51-57,59,60,62-67, 69-71 are rejected under 35

U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such

Art Unit: 1616

omission amounting to a gap between the elements. See MPEP Section 2172.01. The omitted elements are: movement of the aerosol through the various regions by action of an air stream or gas stream (Pg. 7, line, 6, Pg. 17, lines 17-20, Pg. 18, lines 20-21, Pg. 19, lines 1-7). There does not appear to be any indication in the Specification as to how the aerosol is moved from region to region other than by the use of an air stream or nitrogen gas stream. As such, the use of an air stream or nitrogen gas stream appears to be critical to the invention.

Examiner has duly considered Applicant's arguments but deems them unpersuasive.

Applicant reference to the Specification at pg. 7, line 6 discussing the composition of the aerosol gas while suggesting that other gases can be used does not make an air or gas stream any less essential. Applicant argues that moving the aerosol can be achieved in numerous way, however, Applicant does not provide or cite to any support in the Specification for the "numerous ways", including mechanical means. In any case, each of the mechanical means would appear to act by moving air or some other gas, i.e. creating a air or gas stream. Applicant does not cite to any broad language in the Specification which supports its argument that broad language in the disclosure tends to rebut the Examiner's argument of criticality.

Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 7 indicates that the liquid droplets are charged by a charge injector during droplet formation which renders the claim indefinite as claim 1 does not mention liquid droplets. Further, claim 1 indicates that the particles of the aerosol are charged in the second region, as such, the particles are already formed prior to charging in the second region. As such, it is uncertain how the liquid droplets can be charged by a charge injector during droplet formation

when the liquid droplets, assuming that the particles are liquid droplets (See claim 5-contains limitation that particles are liquid droplets), are not charged until the aerosol is moved into the second region.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-5, 22, 23,25, 28,29,32-35,37,49,55-57,59,63,67 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Snaddon et al. (US Pat. 4,533,368).

Snaddon et al. expressly discloses the removal of fine solid or liquid particles from aerosols by charging the particles by corona discharge, moving the charged aerosol particles to another region, removing the particles from the aerosol and depositing them on dielectric substrate by use of electric field generated by alternating current through an electrode in contact with the dielectric substrate (Column 2, lines 40-46, Column 3, lines 6-65, Column 4, lines 13-68, Column 5, lines 1-17, Column 6, lines 3-59) falling within the scope of applicant's claims.

Alternatively, at the very least the claimed invention is rendered obvious within the meaning of 35 USC 103, because the prior art discloses products and uses that contain the same exact ingredients/components as that of the claimed invention. See *In re Fitzgerald*, 205 USPQ

Art Unit: 1616

594 (CCPA 1980). See also *In re May*, 197 USPQ 601, 607 (CCPA 1978). See also *Ex parte Novitski*, 26 USPQ2d 1389, 1390-91 (Bd Pat. App. & Inter. 1993).

Examiner has duly considered Applicant's arguments but deems them unpersuasive.

Applicant argues that the claims have been amended to indicate that the dielectric substrate is unitary. However, Applicant neither cites to anywhere in the Specification which supports this amendment nor defines the term "unitary". "Unitary" is defined by Merriam-Webster's Collegiate Dictionary (10th Ed. 1998) at page 1293 to mean "based on or characterized by unity or units". Applicant merely states that the claims have been amended to state "unitary" and that to the contrary Snaddon teaches granular dielectric material. What is missing in Applicant's argument is why the limitation "unitary" is contrary to the teaching in Snaddon. For example, Applicant has not shown that a granule cannot constitute a unit or that the collection of granules cannot be considered to be a unit or made up of units, assuming that a granule would constitute a unit. As such, Applicant has not shown that the amendment avoids the prior art. Applicant argues that Snaddon does not teach the step of forming an aerosol. However, Snaddon discloses an aerosol. As such, it is inherent that an aerosol is formed.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Art Unit: 1616

A facsimile center has been established in Technology Center 1600. The hours of operation are Monday through Friday, 8:45 AM to 4:45 PM. The telecopier number for accessing the facsimile machine is (703) 872-9306.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank Choi whose telephone number is (571)272-0610. Examiner maintains a flexible schedule. However, Examiner may generally be reached Monday-Friday, 8:00 am – 5:30 pm (EST), except the first Friday of the each biweek which is Examiner's normally scheduled day off.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's Supervisor, Mr. Thurman Page, can be reached at (571)272-0602. Additionally, Technology Center 1600's Receptionist and Customer Service can be reached at (571) 272-1600.

FIC

March 18, 2004



JOHN PAK
PRIMARY EXAMINER
GROUP 1600